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to the The Little Hoover Commission
June 27, 2002, Sacramento, California

Public Health Agencies—Roles, Responsibilities and Challenges

Public Health

Public Health is broadly defined as efforts to fulfill society's interest in assuring conditions in which people can be healthy. The public health mission is quite broad, and includes addressing current health problems as well as working to prevent and/or minimize future problems that affect a defined population. Major responsibilities include protection of the public from biological and other hazards, controlling diseases, preventing future diseases and injuries by modifying environments and reducing risk factors, and promoting improved health.

Comprehensive public health programs at the federal, state and local level provide the public with ten essential public health services:

- Monitor health status to identify community health problems
- Diagnose and investigate health problems and health hazards in the community
- Inform, educate, and empower people about health issues
- Mobilize community partnerships to identify and solve health problems
- Develop policies and plans that support individual and community health efforts
- Enforce laws and regulations that protect health and ensure safety
- Link people to needed personal health services and assure the provision of health care when otherwise unavailable
- Assure a competent public health and personal health care workforce
- Evaluate effectiveness, accessibility, and quality of personal and population-based health services
- Research for new insights and innovative solutions to health problems

California and Local Public Health Departments

California Department of Health Services

The California Department of Health Services has over 5,000 employees located in over 60 field offices throughout the State. As one of the 13 departments in the Health and Welfare Agency, CAL-DHS is organized into seven programs: (1) Health Information and Strategic Planning; (2) Licensing and Certification; (3) Medical Care Services, which includes the Medi-Cal program; (4) Office of Multicultural Health; (5) Office of Women's Health; (6) Prevention Services, which includes branches pertaining to chronic disease and injury control, communicable disease, environmental health, AIDS, laboratory services, border health, and preventive medicine; and (7) Primary Care and Family Health, which includes branches such as Maternal and Child Health

and Children's Medical Services. Support areas include Administration, Audits and Investigations, Civil Rights, Legislative and Governmental Affairs, Legal Services, and Public Affairs.

Los Angeles County

Los Angeles County encompasses 4,300 square miles of urban, suburban and rural communities and includes 89 incorporated cities and 2 islands. The more than 9.5 million resident are ethnically and culturally diverse with over 100 different languages spoken. Los Angeles County's widespread and diverse population, in combination with numerous city government law enforcement and emergency service agencies, present significant challenges in planning and responding to widespread public health emergencies. Los Angeles County Public Health is part of the Department of Health Services, which serves a large safety net provider for the uninsured population. The Public Health division of the Department of Health Services has an annual budget of approximately \$550 million and employs close to 3,800 staff.

Major activities include directly delivered or contractor delivery of specific services, including treatment and prevention of communicable diseases (TB, sexually transmitted diseases, HIV/AIDS etc.) and other conditions, especially substance abuse, control of chronic and communicable diseases (including agents of bioterror), assessment and monitoring of health, health and vital statistics, inspection of food service, health care and other facilities licensure of food service, housing and health care facilities, family health promotion, and emergency preparedness and response.

Public Health Response to Changing Health Threats

Public health has been faced with several new challenges over the past 150 years. First, was to protect the public from communicable diseases due to polluted air and water and contaminated food and increased risk of contagion associated with inadequate housing and poor nutritional status. A combination of environmental health measures and immunizations contributed to a rapid decline in infectious disease deaths. The next challenge was to reduce the toll from the growing burden of chronic diseases associated with specific health habits—use of tobacco and illicit drugs, alcohol abuse, poor nutrition, lack of exercise and stresses associated with difficult economic and social circumstances. Progress has been made through laws at the federal, state and local levels, mass education campaigns, more effective substance abuse treatment, and improved living standards due to economic growth. Reductions in unintentional injury have been made through occupational safety efforts, establishment of building safety standards, and improved engineering of motor vehicles and roads.

Most recently, public health faces the challenges posed by acts of biological terrorism and emerging infectious disease. The potential for intentional events and public health emergencies related to biological agents is related in part to global trade and travel:

- *Globalization of the food supply* - different standards and practices regarding sanitation, use of pesticides, etc. can impact health of residents

- *Importation of new vectors* – new types of insects, new diseases (West Nile)
- *Global travel* – due to the speed of travel, individuals can enter prior to experiencing symptoms of serious communicable diseases

Role in Public Health Emergencies

During a public health emergency public health activities rely on a wide range of public health capacities, such as: (1) early identification of problems (2) assessment of potential health impacts and mitigation strategies (3) deployment of public health professionals to appropriate sites for assessment, treatment, referral of affected or exposed individuals and close coordination with other agencies (4) collection and analysis of epidemiological information from the physical environment, other agencies and individuals to determine the nature and extent of the problem (e.g. environmental contamination, health problems, physical/ mental health care needs and needs for other resources over time) (5) providing or coordinating testing/ prophylaxis/treatment to at risk population; and (6) providing accurate, timely information to public (7) accessing stockpiles of agents for diagnosis and/or treatment of exposed populations. Emergency medical service units help assure that there is a medical system response commensurate to the problem including emergency medical support and staff, maintenance of stockpiles of medication, and management of hospital diversions.

Building a Foundation of Preparation

The ability of health departments to respond to any emergency, whether a natural disaster, an “accident” or an act of terrorism, is a function of the *foundation of preparation* established both internally and with key external partners long before an event takes place. Important activities that help construct a strong foundation include: (1) having the full range of needed capacities, both personnel and systems, to respond to the full range of possible public health emergencies (2) broad participation in training to assure competency in all key disciplines and the conduct of exercises for different scenarios; (3) development of communication systems; (4) training of special response teams; (5) development of interagency protocols (6) education of the medical community; and (7) education of the public.

Bioterrorism Preparedness

Health departments have several essential roles during a bioterrorism threat. Immediate actions for the local health department include:

- Determining whether situation is “unusual”
- Case finding/case investigation
- Laboratory confirmation
- Alerting the medical community
- Identifying the source of outbreak and at-risk persons

- Coordinating with other local health departments, State DHS, CDC, FBI, and other authorities

For example, the *initial response* to a bioterrorism induced outbreak includes: (1) early detection through surveillance/ rapid assessment of reports; (2) rapid confirmation of agent, site, initial at risk population, prophylaxis and/or treatment; (3) mobilization of the public health laboratory; (4) alerting the medical community, emergency rooms and laboratories; (5) determining resource needs and evaluating need for possible quarantine; and (6) coordinating with partner agencies at local, state and national levels.

Need for Enhanced Public Health Infrastructure

Threats of terrorism, especially bioterrorism, have required reassessment of many key components of the public health infrastructure: (1) methods of clinical surveillance and environmental monitoring for communicable and non-communicable diseases; (2) internal communication systems, communication with health care providers, communications with sister agencies (e.g. law enforcement, fire, security, intelligence) at all levels of government, and communication with the public; (3) laboratory capacity to rapidly and accurately identify agents that could be used by terrorists; (4) informatics systems for many purposes—such as identification of unusual disease patterns, identifying victims and identifying and tracking possibly exposed individuals in the field, following up to determine benefits/ side effects; (5) plans for deployment and coordination of public health experts to interview individuals and provide prophylaxis or treatment as necessary; and (6) training of internal staff and health professionals on identifying, reporting and managing patients with existing or potential illness from agents of terror.

At the local level, health departments must be able to provide education, training, communications and technical assistance to providers and agencies within their jurisdiction. Local health departments must provide ongoing surveillance and be prepared to provide initial response to a public health emergency and be self-sufficient until state and federal assistance arrives. In larger local jurisdictions (county), public health must provide coordination and communication between cities and unincorporated areas.

The State's roles focus on coordination of the multiple local jurisdictions and assuring that a statewide plan is in place. They are responsible for statewide surveillance, assuring communication systems throughout the state, and providing regional coordination, training, technical assistance and support. The State's role is extensive in that it must provide for general disaster response coordination, extending to earthquake, fires, floods and other natural and unintentional disasters. This expansive role can tax critical systems and resources.

Challenges to Adequate Preparedness

Both states and counties experience significant challenges:

1. Inadequate appreciation of critical public health role in emergencies.
2. Unresponsive systems for contracting with private organizations
3. Inadequate investment in information and communication systems
4. Insufficient coordinated planning with the many types of organizations at different levels of government to assure a coordinated and effective response.

Critical Infrastructure Components for Preparedness and Response

Several areas within public health require additional support to assure the capacity needed to prepare for and respond to the full range of public health emergencies:

Public Health Funding:

- Continuous funding for long-term increased capacity

Flexible Administrative Systems

- Administrative flexibility that allows rapid commitment of funds to take necessary actions both in preparedness and in response to emergencies

Workforce Issues:

- flexible systems for classification, hiring and compensating individuals with appropriate expertise; adequate recognition of public health departments as training grounds especially in technical areas (epidemiology, laboratory sciences) and the need for strong relationships with appropriate academic institutions and other organizations with special expertise
- well delineated competency standards for public health staff workers and matching educational opportunities on a continuing basis
- experience working in teams on complicated disaster scenario training exercises at multiple levels of government and with multiple agencies at each level

Information and Communication Systems:

- Secure web-based systems for disease reporting, surveillance and notification
- Improved information acquisition and management tools for field use
- Increasing use of geocoding in health data systems
- Improving public access to information and surveillance
- Enhanced communication systems with compatibility to assure communication among all appropriate agencies; redundant systems for emergency communications

Laboratory Capacities:

- Best available equipment for rapid identification of potential terrorist agents (biological, chemical, radiological/ nuclear)
- Increased educational programs to yield needed expert laboratory staff

Public and Professional Education Regarding Public Health:

- Increased emphasis on health care provider reporting of reportable disease based on enhanced recognition of their importance in detecting public health emergencies
- Increased public understanding of importance of sufficient public health infrastructure in protecting the health of all residents